BAAQMD

HEALTH RISK SCREENING ANALYSIS

BP GEMM
1702 Story Road
San Jose, CA 95122

26 February 2003

SUMMARY

This document contains the health risk screening assessment prepared for BP GEMM (plant 11267), located at 1702 Story Road in San Jose, California. The Bay Area Air Quality Management District (BAAQMD), as a routine part of the evaluation of a permit application, prepared this screening risk assessment.

On behalf of the property owner, URS Corporation (URS) wishes to operate a soil vapor extraction and treatment system at this location. This is a system which is designed to clean up gasoline (or hydrocarbon) contaminated soil. Projects such as this typically operate from 6 months up to several years. Once the soil is cleaned up the project is shutdown and equipment dismantled. In order to operate the soil vapor extraction project, the facility must get a permit from BAAQMD. Benzene, a toxic air contaminant and a carcinogen, will be emitted during operation of the facility. BAAQMD staff, as a part of the permit review process, evaluates the possible impact of the benzene emissions that will occur with the operation of the facility.

The benzene impact is expressed in terms of the increased risk of contracting cancer by individuals who live in the impact area. The proposed operation would result in a maximum increased risk of 1.1 chances in a million for residential receptors near the facility, and 3.6 chances in a million to nearby industrial receptors. For the students who attend Miller Elementary School, the maximum increased risk from the proposed operation is 0.056 chances in a million and for students who attend Dorsa Elementary School, the maximum increased risk from the proposed operation is 0.014 chances in a million. These results are presented in Table 1.

The screening methods used by BAAQMD to estimate risk are based on a "worst-possible" estimate of the operating conditions for the facility. This type of analysis is considered to be health-protective.

TABLE 1

Executive Summary Carcinogenic Risks	
Maximum Cancer Risk	
Residential Receptor	**Industrial Receptor**
1.1 chances in a million	3.6 chances in a million
Miller Elementary School	
0.056 chances in a million	
Dorsa Elementary School	
0.014 chances in a million	

(The estimates of residential risk assume that individuals are in continuous residence during a 70-year lifetime. Estimates of industrial risk assume that an off-site worker is exposed 8 hours/day, 245 days/year for 40 years. The estimates of risk at the school assume that children are in attendance 10 hours/day, 180 days/year, for 9 years.)

School addresses: Miller Elementary School
1250 S. King Road
San Jose, CA 95122

Dorsa Elementary School
1290 Bal Harbor Way
San Jose, CA 95122

Risk Screening Assessment for Application 6464
BP GEMM, San Jose

I. Introduction

The BAAQMD Staff Risk Management Policy (May 9, 1991) states that a written risk screening analysis is to be prepared for any application for a new source of toxic emissions, or for any application for increased toxic emissions from a modified existing source.

II. Facility Description

Plant Name:	BP GEMM
Location:	1702 Story Road San Jose, CA 95122
Type of Operation:	Soil Vapor Extraction and Treatment System
Plant #:	11267
Application #:	6464

III. Exposure Assessment

The toxic air contaminant of concern at this facility is benzene, a carcinogen. Benzene is emitted as a result of the soil vapor extraction and treatment process. The estimated emission rate and annual emissions of benzene that can be expected from this facility are shown in Table 2.

Ambient air concentrations of benzene were predicted using the ISCST-Prime air dispersion computer model. This model uses information about the facility and the emission rates of toxic air contaminants to estimate what concentrations would be expected in the air around the site. The estimated maximum concentrations of benzene are shown in Table 3.

IV. Risk Assessment

The estimated concentrations of benzene are used to calculate the possible carcinogenic risks that might be expected to arise from these exposures. The results are presented in Table 4. In the case of benzene, the risk is due solely to inhalation exposure.

These potential risk values were calculated using standard risk assessment methodology. They include the assumptions that residents are present in their homes 24 hours/day, 7 days/week for 70-years; off-site workers are present 8 hours/day, 245 days/year for 40 years; and the school students are present 10 hours/day, 180 days/year, for 9 years.

The risk values are based in part on the "best estimates" of plausible cancer potencies as determined by the California Office of Environmental Health Hazard Assessment (OEHHA). The actual value of risk, which cannot be determined, may approach zero.

TABLE 2

Pollutant Emissions			
Pollutant	**Maximum Emission Rate (gm/sec)**	**Maximum Annual Amount (lb/year)**	**Source of Emission(s)**
Benzene	2.05E-03	142.4	Soil vapor extraction and treatment system

TABLE 3

Annual Average Benzene Concentration in Ambient Air ($\mu g/m^3$)			
Maximum Residential Exposure	**Maximum Industrial Exposure**	**Miller Elementary School**	**Dorsa Elementary School**
3.9E-2	9.6E-1	3.6E-2	9.0E-3

TABLE 4

Maximum Individual Carcinogenic Risk Resulting from Inhalation Exposure to Benzene			
Residential Receptor	**Industrial Receptor**	**Miller Elementary Receptor**	**Dorsa Elementary Receptor**
1.1 chances in a million	3.6 chances in a million	0.056 chances in a million	0.014 chances in a million